

**I/We Claim:**

1. A method for selecting an input/output scheduler in a computing system having a plurality of input/output schedulers, said method comprising the steps of:
  - 5 mapping each of said plurality of input/output schedulers against a corresponding desired set of heuristics;  
monitoring heuristics relating to job requests performed in said computing system;  
and  
determining whether said monitored heuristics match any of said desired sets of
  - 10 heuristics to select one of said plurality of input/output schedulers.
2. The method according to claim 1, comprising the further step of:  
selecting a default input/output scheduler from said plurality of input/output  
schedulers, when said monitored heuristics do not match any of said desired sets of
- 15 heuristics.
3. The method according to claim 1, wherein said monitored heuristics are selected from the group of heuristics consisting of number of read requests, number of write requests, proportion of read requests to write requests, average time for a process to
- 20 submit successive job requests, input/output throughput, and disk utilization.
4. The method according to claim 1, wherein at least one of said plurality of input/output schedulers is selected from the group of schedulers consisting of First In First Out (FIFO), Shortest Positioning Time First (SPTF), Anticipatory Scheduler (AS),
- 25 Deadline scheduler, and Fairness Queue scheduler.
5. A method for automatically selecting an input/output scheduler in a computing system having a plurality of input/output schedulers, said method comprising the steps of:  
monitoring heuristics of job requests performed in said computing system; and
- 30 comparing said monitored heuristics with a desired set of heuristics to select one of said plurality of input/output schedulers.

6. An apparatus for selecting an input/output scheduler in a computing system having a plurality of input/output schedulers, said apparatus comprising:
- means for monitoring heuristics of jobs performed in said computing system;
  - means for comparing said monitored heuristics with a desired set of heuristics
- 5 associated with each of said plurality of input/output schedulers to determine a preferred one of said input/output schedulers; and
- means for activating said preferred input/output scheduler.
7. The apparatus according to claim 6, wherein said means for activating said
- 10 preferred input/output scheduler is a kernel daemon.
8. A computing system for selecting an input/output scheduler, said computing system comprising:
- at least one application;
- 15 a plurality of input/output schedulers;
- a mapping of said plurality of input/output schedulers against a corresponding desired set of operating heuristics; and
  - an operating system kernel for gathering and analysing heuristics relating to job requests submitted to said operating system kernel by said at least one application, said
- 20 operating system kernel selecting one of said plurality of input/output schedulers based on said analysed heuristics and said desired sets of operating heuristics in said table.
9. The computing system according to claim 8, wherein said analysed heuristics are selected from the group of heuristics consisting of number of read requests, number of
- 25 write requests, proportion of read requests to write requests, average time for a process to submit successive job requests, input/output throughput, and disk utilization.
10. The computing system according to claim 8, wherein at least one of said plurality of input/output schedulers is selected from the group of schedulers consisting of First In
- 30 First Out (FIFO), Shortest Positioning Time First (SPTF), Anticipatory Scheduler (AS), Deadline scheduler, and Fairness Queue scheduler.

11. An operating system kernel in a computing system, said operating system kernel comprising:
- means for maintaining a predetermined set of values associated with a plurality of input/output schedulers;
  - 5 means for monitoring heuristics associated with jobs performed in said computing system; and
  - means for comparing said monitored heuristics with said predetermined set of values to select one of said plurality of input/output schedulers.
- 10 12. The operating system kernel according to claim 11, further comprising:
- means for activating said selected input/output scheduler.
13. The operating system kernel according to claim 11, wherein one of said plurality of input/output schedulers is a default scheduler.
- 15 14. The operating system kernel according to claim 11, wherein said predetermined set of values are selected from the group of heuristics consisting of number of read requests, number of write requests, proportion of read requests to write requests, average time for a process to submit successive job requests, input/output throughput, and disk utilization;
- 20 15. The operating system kernel according to claim 11, wherein said activating means is a daemon.
16. A computing system having a plurality of available input/output schedulers, said
- 25 computing system comprising:
- an operating system module;
  - an input/output scheduling module having an active input/output scheduler selected from said plurality of input/output schedulers;
  - a hardware device drivers module for executing job requests received from said
  - 30 operating system module via said input/output scheduling module;
  - a heuristics module for analysing information returned from said hardware device drivers module relating to said executed job requests;

a switch module for comparing said analysed information with a predetermined set of values to select a preferred one of said plurality of input/output schedulers; and

a kernel thread for switching said active input/output scheduler in said input/output scheduling module to said preferred input/output scheduler.

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17. A computer program product comprising a computer readable medium having a computer program recorded therein for selecting an input/output scheduler in a computing system having a plurality of input/output schedulers, said computer program comprising:

10 computer program code means for mapping each of said plurality of input/output schedulers against a corresponding desired set of heuristics;

computer program code means for monitoring heuristics relating to job requests performed in said computing system; and

15 computer program code means for determining whether said monitored heuristics match any of said desired sets of heuristics to select one of said plurality of input/output schedulers.

18. A computer program product comprising a computer readable medium having a computer program recorded therein for automatically selecting an input/output scheduler in a computing system having a plurality of input/output schedulers, said computer  
20 program comprising:

computer program code means for monitoring heuristics of job requests performed in said computing system; and

25 computer program code means for comparing said monitored heuristics with a desired set of heuristics to select one of said plurality of input/output schedulers.